

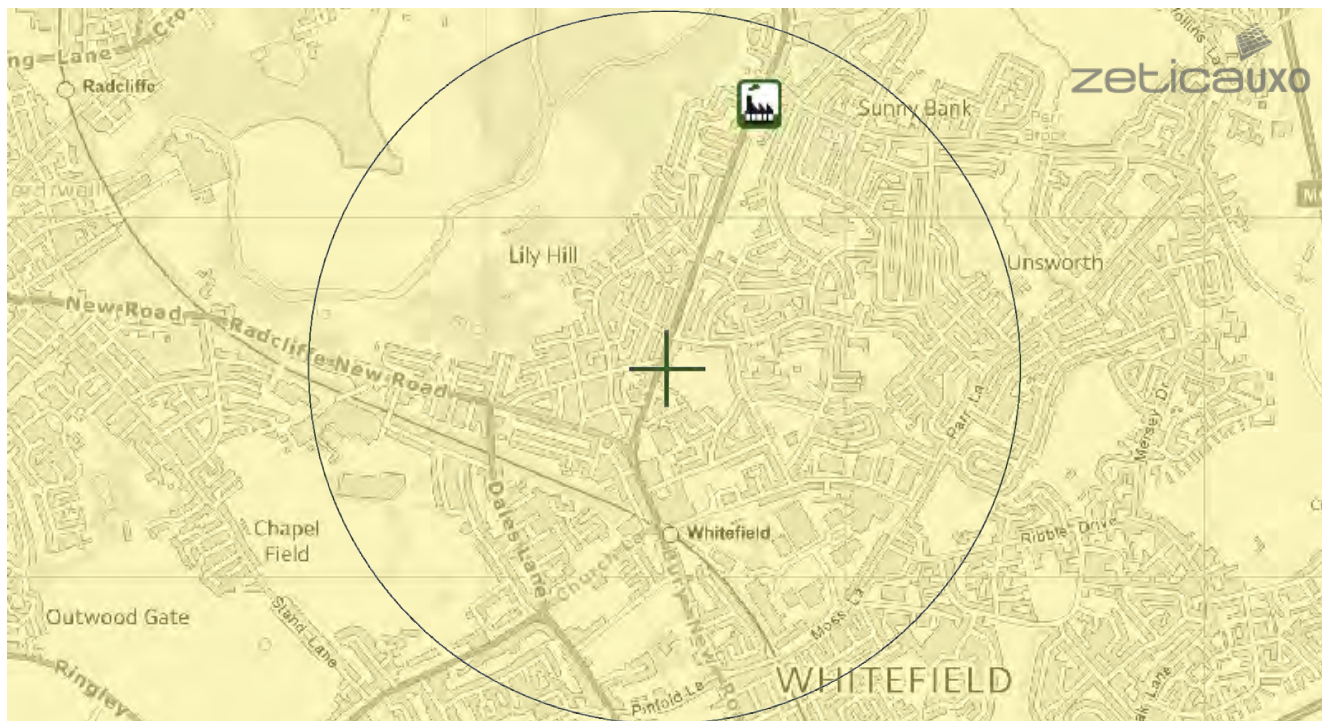
APPENDIX 7
ZETICA UXO RISK MAP

UNEXPLODED BOMB RISK MAP



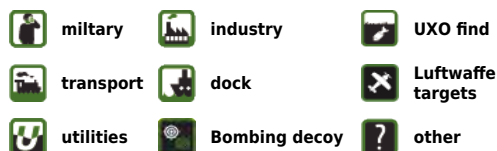
SITE LOCATION

Location: M45 7SY,
Map Centre: 380510,406585



LEGEND

- High:** Areas indicated as having a bombing density of 50 bombs per 1000acre or higher.
- Moderate:** Areas indicated as having a bombing density of 15 to 49 bombs per 1000acre.
- Low:** Areas indicated as having 15 bombs per 1000acre or less.



How to use your Unexploded Bomb (UXB) risk map?

The map indicates the potential for Unexploded Bombs (UXB) to be present as a result of World War Two (WWII) bombing.

You can incorporate the map into your preliminary risk assessment* for potential Unexploded Ordnance (UXO) for a site. Using this map, you can make an informed decision as to whether more in-depth detailed risk assessment* is necessary.

What do I do if my site is in a moderate or high risk area?

Generally, we recommend that a detailed UXO desk study and risk assessment is undertaken for sites in a moderate or high UXB risk area.

Similarly, if your site is near to a designated Luftwaffe target or bombing decoy then additional detailed research is recommended.

More often than not, this further detailed research will conclude that the potential for a significant UXO hazard to be present on your site is actually low.

Never plan site work or undertake a risk assessment using these maps alone. More detail is required, particularly where there may be a source of UXO from other military operations which are not reflected on these maps.

If my site is in a low risk area, do I need to do anything?

If both the map and other research confirms that there is a low potential for UXO to be present on your site then, subject to your own comfort and risk tolerance, works can proceed with no special precautions.

A low risk really means that there is no greater probability of encountering UXO than anywhere else in the UK.

If you are unsure whether other sources of UXO may be present, you can ask for one of our **pre-desk study assessments (PDSA)**

If I have any questions, who do I contact?

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web: www.zeticauxo.com

The information in this UXB risk map is derived from a number of sources and should be used in conjunction with the accompanying notes on our website: (<https://zeticauxo.com/downloads-and-resources/risk-maps/>)

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It is important to note that this map is not a UXO risk assessment and should not be reported as such when reproduced.

*Preliminary and detailed UXO risk assessments are advocated as good practice by industry guidance such as CIRIA C681 'Unexploded Ordnance (UXO), a guide for the construction industry'.

STAGE 1 PRELIMINARY UXO RISK ASSESSMENT

REPORT REF: PRA-22-1950 | Revision: 0



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Client: IGE Consulting Ltd
Project: Whitefield Fire Station, Manchester
Date: 03/11/2022

INTRODUCTION

The Stage 1 Preliminary Risk Assessment is an initial screening assessment designed to highlight any sources of unexploded ordnance (UXO) with the potential to contaminate a given site.

The aim of the Stage 1 assessment is to identify or discount the need for further detailed research - a Stage 2 Detailed UXO Risk Assessment.

This desktop assessment has been researched and written by a dedicated Researcher / Risk Assessor and produced in accordance with the CIRIA C681 Guidelines: 'Unexploded Ordnance, a Guide for the Construction Industry' (published in 2009).

In preparation for this assessment, original wartime records, historic OS mapping and the *Brimstone UXO Sources Database* have been reviewed. The latter incorporates multiple datasets plotting the positions of a variety of domestic military sites and confirmed historic German bombing targets.

The Stage 1 Preliminary Risk Assessment considers the following:

1. The Proposed Works
2. Enemy Action during WWI and WWII
3. British / Allied Military Activity
4. Historic Site Occupancy
5. Risk Mitigating Factors

THE SITE

The Site (approximately centred on the National Grid Ref: SD 80480 06478) is located in Whitefield, Manchester, approximately 360m to the north of Whitefield train station.

The Site currently comprises Whitefield Fire Station, the main structure of which is situated centrally. The northern half of the Site comprises hardstanding, with the south consisting mostly of grass, with some mature vegetation.

Residential properties lie to the north of the Site, while George Street and Bury New Road form the south-eastern and western boundaries respectively.



THE PROPOSED WORKS

Planned SI works on Site will include deep boreholes to c. 10m bgl, although possibly deeper.

Proposed development works will comprise the construction of a new fire station, including the possible use of piled foundations.

ENEMY ACTION DURING WWI AND WWII

Potential Source of UXO	Significant?	Details
WWI German Bombing	×	No air raids affected Whitefield during WWI.

WWII German Bombing	✓	British District Bombing Density Statistics	The Site was located within the WWII-era Urban District of Whitefield, which sustained 4.4 bombs / 1,000 acres, a very low bombing density.
		Evidence of bomb strikes / damage	A map of casualties in Manchester sustained during the Christmas Blitz records one casualty within an approximate 500m radius of the Site, located approximately 470m to the south. Anecdotal evidence indicates two other incidents locally, although both are situated approximately 1km to the south-west. Oblique photography dated 1951 provides a somewhat clear picture of the Site, with no evidence of bombing (i.e. cratering, large entry holes) visible. Similarly, no evidence of structural damage has been observed within the Site’s local surrounds.
		Local Bombing Decoy Sites	None located within a significant distance. The closest was located approximately 11.9km to the south-west.
		Local German Bombing Targets	Luftwaffe target imagery/mapping does not denote any specific targets for bombing in the vicinity of the Site. Industry in the vicinity of Whitefield train station, approximately 260m to the south of the Site, may have been a potential target of opportunity.
WWII German Cross Channel Artillery Shelling	✗	n/a	
BRITISH / ALLIED MILITARY ACTIVITY			
Potential Source of UXO	Significant?	Details	
WWII Home Guard (HG) activity	✗	No specific Home Guard battalion appears to have been raised in Whitefield; however, soldiers of the 21 st Lancashire (Bury) Home Guard (HG) Battalion may have been partially responsible for defending the study area during WWII. The possibility that the Site was accessed by armed HG soldiers cannot be discounted at this stage, given its undeveloped nature; however, this is not thought to be a likely scenario.	
Site requisitioned for wartime military use	✗	No such evidence found at this stage. Although unlikely, the possibility that the open ground on Site was requisitioned for temporary wartime use cannot be discounted at this stage, e.g searchlight battery, LAA gun battery, barrage balloon site.	
Existing or historic Army or RAF training area / weapons range	✗	n/a	
Existing or historic military bases and other installations	✗	n/a	
Existing or historic munitions or explosives factories	✗	n/a	
Existing or historic military storage depots	✗	n/a	
Existing or historic military defensive fortifications	✗	n/a	

WWII light and / or heavy anti-aircraft (LAA and HAA) fire	✓	29 HAA batteries were established within a 15km radius of the Site. Luftwaffe raids in the wider region were somewhat frequent, but intense, and therefore these guns would have expended a notable ammunition over the wider area. It is possible that an unexploded AA shell struck the Site.
WWII pipe-mined locations and beach minefields	✗	n/a

SITE HISTORY

What was the Site occupancy historically, especially during WWI and WWII?	WWII-era OS mapping shows the Site to comprise open land, with post-WWII oblique imagery indicating allotments were present. Residential properties lie on Bury New Road to the west of the Site, while George Street binds the Site to the south.
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RISK MITIGATING FACTORS

Post-conflict ground works	The low-rise fire station on Site, thought to have been constructed between 1964 and 1974, is expected to have required shallow foundations (1-2m bgl). The laying of hardstanding may also have disturbed the earth to very-shallow depths (<1m bgl). No deep excavations are anticipated to have occurred on Site post-WWII.
Likelihood of UXO remaining	The risk associated with (any) deep buried (>2m bgl) German UXBs on Site remains unmitigated. Shallow buried (1-2m bgl) UXBs and HAA shells will likely have been partially mitigated, as well as very shallow buried (<1m bgl) HAA shells.

CONCLUSIONS

German UXO:

- The Site was located within the WWII-era Urban District of Whitefield, which sustained 4.4 bombs / 1,000 acres, a very low bombing density. This may be explained by the lack of any significant identifiable Luftwaffe in the vicinity.
- A map of casualties across Manchester records the closest to have occurred approximately 470m to the south, with no additional evidence, anecdotal or visual, of bombing closer to the Site.
- Given that the Site appears to have comprised allotments during WWII, evidence of a UXB strike will have been less noticeable than within structures, for example. Similarly, access will have been less frequent, and dependent on the individual owners. Despite this, the Site is bordered by residential properties, and given the low density of bombing locally, a bomb/UXB is more likely to have been noticed during its fall.
- Therefore, in summary, the risk of UXO contamination is not deemed to be elevated above the background level for Whitefield.

British / Allied UXO:

- No evidence of significant military activity specifically on Site has been found and none is likely to have occurred.
- It is quite possible that an unexploded British AA shell struck the Site during WWII and penetrated to a shallow depth.

RECOMMENDATION(S)

SI Works	A Stage 2 Detailed Risk Assessment is not considered necessary prior to works commencing. However, the possibility of UXO remaining on Site cannot be completely ruled out at desktop stage. Therefore, a UXO Safety Awareness Briefing to all personnel conducting ground works would be considered prudent.
Development Works	